

## ABSTRACT

### **The Effect of Xanthone on The Features of Tubular Epithelium Cells in Male White Rats Kidney Induced by Carbon Tetrachlorida (CCl<sub>4</sub>)**

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*Background: Carbon tetrachloride is a chemical substance that colourless, volatile liquid, sweet odor and toxic to the kidney. The metabolism of CCl<sub>4</sub> produce free radical CCl<sub>3</sub>. that can damage renal tubular epithelium cells. Mangosteen pericarp (Garcinia mangostana L.) contains xanthone acts as antioxidant which was able to inhibit free radicals.*

*Objective : The purpose of this research was to know the effect of xanthone on the level of necrotic tubular epithelium cells on adult male white rats kidney induced by carbon tetrachloride.*

*Methods : This research was experimental study and the design was post test only with control group design, 25 male white rats was divided into five groups. Group 1 was control group, group 2 induced by CCl<sub>4</sub> in olive oil 1 ml/kgBW subcutan, group 3 induced by CCl<sub>4</sub> 1 ml/kgBW subcutan and xanthone 35 mg/kgBW/day oral dose for 21 days, group 4 induced by CCl<sub>4</sub> 1 ml/kgBW subcutan and xanthone 70 mg/kgBW/day oral dose for 21 days, and group 5 induced by CCl<sub>4</sub> 1 ml/kgBW subcutan and xanthone 140 mg/kgBW/day oral dose for 21 days. The rats were terminated at 22<sup>th</sup> day and then the microscopic pattern of white rats's kidneys were examined. Data were analyzed by Anova and LSD (Least Significant Different).*

*Results : Descriptive analysis of data: the average score of percentage of kidney tubular epithelium cells in each groups, group 1 (1,25±0,68), group 2 (73,28±12,97), group 3 (49,35±16,90), group 4 (35,76±12,75), and group 5 (41,28±8,02). The results obtained by Anova test  $p < 0,05$ , it means there is a difference in at least two groups. The results obtained by LSD test at K1-K2 ( $p < 0.001$ ), K1-K3 ( $p < 0.001$ ), K1-K4 ( $p < 0.001$ ), K1-K5 ( $p < 0.001$ ), K2-K3 ( $p = 0.007$ ), K2-K4 ( $p < 0.001$ ), K2-K5 ( $p = 0.001$ ), K3-K4 ( $p = 0.062$ ), K3-K5 ( $p = 0.307$ ), dan K4-K5 ( $p = 0.364$ ), it means there is a significant difference in control group and treatment group, there is a significant difference in the group which only induced by CCl<sub>4</sub> and the group which induced by CCl<sub>4</sub> + xanthone, and there isn't a significant difference in the group which induced by CCl<sub>4</sub> + xanthone with a variations doses.*

*Conclusions : This study can be concluded that there was the xanthone had significant effect on decreasing necrotic tubular epithelium cells of male white rats kidney induced by CCl<sub>4</sub>.*

*Keywords: Xanthone, renal tubular epithelium cells, carbon tetrachloride*